

DIVISION 27 COMMUNICATIONS

Section 27 00 00 Communications - General

1. General

- 1.1 Varying, or deviating from any item(s) indicated in this document must be approved by the Minister's Representative. the Minister's Representative will not grant a deviation from these requirements unless the deviation has been submitted in writing for review and approved prior to proceeding with the design.
 - 1.2 Materials and methodology employed for the installation of telephone and computer structured cabling systems shall be as per the Nova Scotia Government Structured Cabling Guidelines Information Transport Systems and the DC350 as a minimum. Where these references are at variance with each other, the more stringent requirements shall govern.
 - 1.3 For Educational facilities the requirements identified in DC350 parts 1 and 2, the Nova Scotia Government Structured Cabling Guidelines Information Transport Systems, and ANSI/BICSI 001 Information and Communication Technology Systems Design and Implementation Best Practices for Educational Institutions and Facilities shall be incorporated. Where these references are at variance with each other, the more stringent requirements shall govern.
 - 1.4 For Healthcare facilities the requirements identified in DC350 part 1, the Nova Scotia Government Structured Cabling Guidelines Information Transport Systems, and ANSI/BICSI 004 Information Communication Technology Systems Design and Implementation Best Practices for Healthcare Institutions and Facilities shall be incorporated. Where these references are at variance with each other, the more stringent requirements shall govern.
 - 1.5 All communications room lighting shall be designed to be 40 fc at floor level.
 - 1.6 Provide two (2) telecommunications outlets in each office, locate the outlets to accommodate furniture layout changes.
2. Provide Wireless Access Points (WAP) per the following:
- 2.1 in open area office spaces, one WAP per 83 square meters (900 square feet),
 - 2.2 in boardrooms and meeting rooms,
 - 2.3 in corridors at 12 metre (40') spacings
 - 2.4 WAP are to be located above the accessible ceiling.

- 2.5 Where the size and or complexity of the facility requires specialized design, a heat map shall be provided to verify the wireless network system design. The requirement to provide the heatmap shall be determined by the Minister's Representative.
3. Equipment shall not carry any logos or text which identifies the equipment manufacturer / supplier; exception: equipment located in service spaces.

Section 27 10 00 Structured Cabling

1. Materials and methodology employed for the installation of telephone and computer structured cabling systems shall be as per the Nova Scotia Government Structured Cabling Guidelines Information Transport Systems as a minimum (Refer to Electrical Appendix guidelines attached at the end of Part 1), with the following changes:
 - 1.1 The conduit shall be sized to accommodate the # of cables serving the room plus 25% spare for future installations above and beyond code conduit fill requirements. Minimum conduit size shall be 27mm (1").
2. Where more than one room might be required to facilitate terminations due to cable lengths exceeding maximum lengths of 90 m, additional satellite communications rooms/closets shall be provided as required. These rooms may also contain power distribution branch circuit panelboards provided that all required clearances are met.
3. All communications rooms shall be sized as per the NS Government Structured Cabling Guidelines as a minimum. In facilities which fall under the major occupancy classification groups as defined in the National Building Code of Canada, are larger than 2800 square metres (30,000 sq ft) and incorporate construction materials which absorb or reflect radio signals, for example: low e glass, reinforced concrete, metal Q-deck etc. shall include the following provisions for a future (NIC) Distributed Antenna System (DAS).
 - 3.1 Provide space for a future 4 post cabinet in the main telecommunications room, ensure sufficient cooling is provided in this room to accommodate an additional 2000 watt electrical load for the equipment to be installed in the future cabinet.
 - 3.2 Plan for space and infrastructure to be available for the possible future NIC equipment to be installed,
 - 3.3 Provide a dedicated conduit sleeve(s) for future DAS from each telecommunications room into the adjacent corridor.
4. Unless specifically indicated otherwise, "minimum" CMR (FT-4) rated cable is to be used throughout.
5. Cables above T-bar ceiling are to be located within 750mm (30"), of T-bar ceiling.

6. In renovations, review existing main services to ensure they are adequate to accommodate upgrades and re- design these services as required.
7. All systems shall be installed by qualified personnel, such as a Construction Electrician or Communications Technician certified by the Nova Scotia Apprenticeship Agency.
8. Where the “grouping” of various systems outlets or multiple type outlets in dry-wall type construction is desirable, the use of “box mounting brackets” are to be installed between, and secured to both metal studs.
9. Outlet identification shall be as described in the NS Government Structured Cabling Guidelines.
10. All cable identification shall be located adjacent connectors.
11. Cable Tray
 - 11.1 Where communications cables are permitted to be installed in a ceiling space without the benefit of conduit, main runs shall be installed in a heavy duty, aluminum, ladder type cable tray, minimum side rail depth 100mm (4”), sized to carry applicable cables plus 25% spare.
 - 11.2 Cable trays are to be installed in corridors. Provide conduit within corridors to connect cable tray to adjacent rooms.
 - 11.3 Cable tray is to be used for all communication cables not run in conduit/raceway.
 - 11.4 Cable trays (and their support systems) shall not be used as a means of support for any other system.
12. Communication cables are to be installed as per the following guidelines:
 - 12.1 Cables are to be installed parallel and perpendicular to building lines up to wall where they in turn are either drawn in conduit sleeves or concealed in dry-wall type partitions.
 - 12.2 The securing and/or supporting of low voltage cables to the “structure” is not to exceed 48" intervals.
 - 12.3 Where cables are permitted to be run from room to room, the use of EMT wall sleeves will be permitted subject to the following conditions: EMT conduit is to be reamed (both ends) prior to installation; EMT conduit is to be secured to the wall or ceiling structure using the manufacturers approved fastening / support system. Provide and install screw-on metal (malleable) type bushings on one end of the EMT conduit (complete with bonding connection) and an "Arlington" type plastic bushing on the other end are to be used with the EMT wall stub.

13. Ensure that design/construction of structured cabling systems is coordinated with end user IT personnel and shall be approved by the Minister's Representative.
14. All voice work shall be coordinated with the Telephone Authority, and requirements for each project shall be approved by the Minister's Representative.
15. Provide a single voice outlet and single data outlet in each mechanical room/space containing mechanical equipment.

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